

## CHAPTER 3

### AFFECTED ENVIRONMENT

#### INTRODUCTION

The Monument Planning Area lies on the Snake River plains of southcentral Idaho between the Snake River and the central Idaho mountains. It extends from Bliss on the west to American Falls on the east, and from the Snake River on the south to the Craters of the Moon National Monument on the north. The planning area is characterized by uniform, gently sloping lava plains that rise in elevation from 2,675 feet in the Snake River Canyon near Bliss to over 5,900 feet on North Laidlaw Butte near the Craters of the Moon National Monument.

The climate of the planning area is a modified continental type influenced by Pacific air masses with cold, snowy winters and hot, dry summers. Precipitation generally follows elevation with lower amounts of precipitation at lower elevations, and higher amounts at higher elevations. Most of the 9 to 16 inches of annual precipitation are received during late fall, winter, and spring, while the summers are typically very dry. Snow is common from December through February. Wind is also common throughout the area with speeds in excess of 25 mph frequent during the spring months. Air quality is generally excellent, although air stagnation periods cause localized air quality problems during late fall and winter.

Surface water is very limited in the planning area. The Snake River flows along the south of the planning area with the Little Wood River and a short stretch of the Big Wood River on the north. Other natural water sources are scarce and seasonal. Several irrigation canals cross public land in the southwest of the planning unit. Water developments scattered throughout the planning area, primarily for livestock water, are the only other sources of surface water. These are typically small pit-type structures that dry up by early July.

The entire planning area consists of basalt flows from numerous volcanic vents. Individual lava flows, such as the Craters of the Moon flow, are as recent as 2,270 years (Kuntz et al.). The topography is generally flat to rolling with gentle slopes, but many of the volcanic vents have formed buttes that lend local relief to the lava plains. Steep, rugged canyons and spectacular waterfalls occur along the Snake River where landforms were sculpted by flood waters from ancient Lake Bonneville. The overflow of Lake Bonneville cut vertical channels through the basalt, scoured some areas, and left deposits in other areas along the southern edge of the planning area.

North of the flood impact zone and south of the more recent lava flows, good soils occur that support agriculture. Rock outcrops are common on fringe

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areas where soils are shallower, but many areas are rock-free. Fifteen towns with populations under 10,000 people are associated with the larger tracts of farmland in this part of the planning area.

## **FIRE MANAGEMENT**

A 30-year average of 81 wildfires per year has burned 34,000 acres each year in the planning area. Actual acreage burned each year has varied widely in the last 30 years from a few hundred acres to over 300,000 acres. Ignition sources are 70 percent man-caused and 30 percent lightning-caused. Most man-caused fires occur where State Highways 24, 26, and 46, and U.S. Highway 93 are adjacent to public lands. Areas of public lands along the Union Pacific Railroad (UPRR) tracks and the public lands north of the Snake River near Twin Falls also have a very high incidence of man-caused fires.

Most of the lightning-caused fires occur along two main storm tracks. Thunder storms generally enter the planning area near Twin Falls. One storm track moves northward parallel to U.S. Highway 93. A second storm track goes northeast from Twin Falls toward the south end of the Great Rift lava flow. Most dry lightning and lightning-caused fires occur along the edges of these storm tracks. Starts caused by lightning directly in the path of a given thunder storm are often rained out.

All of the planning area has the same priority for fire protection except for the Great Rift Management Area, which is in a limited suppression category. In multiple fire situations, the areas with the largest "big fire" potential and the highest potential for resource damage are given priority, as determined by value-at-risk in the Normal Fire Year Plan. See Appendix B for more information.

## Fire Ecology

The influences of wildfire on the vegetation of the planning area are shown on Map 6. The planning area is divided into six zones that reflect the fire history, present vegetation, and management implications common to a given area. A description of each of these zones is given in Appendix B.

The areas most prone to burning are Zones 1 and 2 (477,790 acres). These areas have an average burning frequency of at least once every 15 years and one zone within this area (Zone 1A; 90,970 acres) has a fire frequency of every 10 years or less. Some of these frequently burned areas burn an average of once every five years. The most frequently burned areas are shown on Map 6.

Large burns have been common on the planning area since the early 1920s (Gerity 1969). Fire and heavy grazing during this period depleted the native vegetation and allowed the invasion of thousands of acres by cheatgrass. Cheatgrass is now a major component of the plant communities of 97 percent of the planning area (excluding new lava), or about 893,000 acres, and is the dominant plant species on about 24 percent of the planning area. Cheatgrass is highly flammable during the fire season (Hull 1965, Klemmedson and Smith 1964) and cheatgrass dominated communities have the capability to return to pre-burn plant compositions within two or three years after burning (Hull 1965). Observations in the most frequently burned areas of the Shoshone District indicate that cheatgrass communities can maintain their composition with fire frequencies of once every five years. However, annual burning can significantly reduce cheatgrass cover and frequency (Hull 1965; Young, Evans, and Robison 1972).

### WILDLIFE

It is important to understand which factors have important effects on wildlife over most of the planning area and which do not. Wildlife habitat quality is currently subject to two major influences, largely beyond management control, that overwhelm other factors. These are: (1) frequent wildfires that destroy sagebrush and bitterbrush, and (2) subsequent domination of the habitat by cheatgrass, a species well-adapted to fire. Cheatgrass replaces valuable native grasses and forbs by out-competing them and increases the frequency of future wildfire, thereby seriously hampering the reestablishment of sagebrush and bitterbrush that are essential for so many species (See Appendix B and Map 6 for more details on fire ecology). This ecological situation combined with low precipitation (8 to 11 inches) and extreme scarcity of surface water (see Map 1) over most of the planning area renders the habitat marginal for most species. Only a few, notably the burrowing owl and long-billed curlew, appear to benefit from this habitat.

Another important factor influencing populations of big game and sage grouse is the loss of historical winter ranges *which has occurred* over the years through conversion of land along the southern portion of the planning area to agriculture (private lands on Map 1). In severe winters with deep snow, animals are not able to move as far south to regions of lower elevations, higher temperatures, and lesser snow accumulation as they did in pre-settlement years. Thus, the animals are forced to winter not only farther to the north, but also in the zone of most frequent wildfire where brush cover is severely limited.

Two other factors beyond management control have had impacts on pronghorn populations--disease and accidental death of animals struck by trains. Because the pronghorn population is low, periodic loss of animals to these causes can substantially set back the growth of the herd.

In comparison to the above factors which limit population sizes of many species in the planning area, several more classic factors do not have important effects. Particularly, forage availability to big game and sage grouse is not limited by grazing levels or season of use by livestock. Currently, the forage is available to support greater populations of these species if the factors listed above were not limiting. Consequently, change in grazing management is not an important management consideration at this time.

In conjunction with livestock management, the range improvements being considered in the alternatives are, in many cases, beneficial to wildlife. In providing seedings to replace cheatgrass and in supplying new sources of water, wildlife will profit.

Each species that is important in the planning area is discussed below and in Chapter 4. It will be helpful to keep the above information in mind while evaluating these sections.

#### Bald Eagle (Endangered)

Since 1979 between 0 and 37 bald eagles have been counted in winter along the Snake River, which forms the southern boundary to the planning area (see Map 7). Bald eagles roost and perch on private land in this district, whereas they forage on and along the river. They will not be affected by land use decisions in the RMP.

#### Bliss Rapids Snail (Candidate Endangered)

A population of the Bliss Rapids snail (new species and genus) has been found under cobbles beneath the large waterfall in Box Canyon (Taylor 1982). This species is otherwise restricted to fast-flowing water in the Snake River below Salmon Falls Creek. The waterfall site is on private land, but the species could occur on public land within the canyon. The species requires a constant flow of water to survive. Creation of slack water or loss of water would destroy the population.

Given the similarity of habitats in Box Canyon and Vineyard Creek, it is conceivable that this species also occurs in Vineyard Creek at the base of the waterfalls below the outlet of Vineyard Lake.

#### Ferruginous Hawk (Candidate Threatened)

A single nest site is known in the planning area. Because they nest on the ground or on low outcrops and are very sensitive to disturbance at the nest

## Wildlife

### *Long-Billed Curlew (Sensitive)*

early in the breeding season, current numbers are probably far below historic numbers. Ferruginous hawks will use artificial nest structures. Thus, the opportunity exists under all plan alternatives to increase the population.

### Swainson's Hawk (Candidate Threatened)

No Swainson's hawk nest sites are known to exist on public land, but three sites have been located within 0.5 mile, and one within 1.5 miles, of public land. Groups of immature Swainson's hawk, numbering 10 to 70, move through the planning area in late summer. Thus, this species forages on public land, especially where agricultural land is nearby. Opportunities exist to increase the population through tree planting and providing artificial structures for nest sites, especially on Isolated Tracts near agricultural land.

### Burrowing Owl (Sensitive)

Over 180 nest sites have been located on public land in the planning area and the breeding range is well defined (see Map 7). Burrowing owls are widespread in cheatgrass habitat where yellow-bellied marmots and badgers provide burrows. They occur more frequently where agricultural land and small patches of sagebrush are also available as foraging habitat. Nest sites in rock outcrops are most valuable because they are not easily destroyed. Over 20 nest sites have been destroyed by fire rehabilitation, plow and seed jobs, and by cattle trampling. The opportunity exists to increase owl numbers by providing artificial nest boxes, especially on Isolated Tracts, but also throughout the breeding range. Both wildfire and grazing provide the disturbed vegetation that this species prefers around the nest site.

### Long-Billed Curlew (Sensitive)

Curlews are widely scattered in low numbers across the southern portion of the planning area on public land (see Map 7). This species prefers the short, disturbed vegetation that occurs over much of the area following grazing and wildfire. No limiting factors have been defined and there will be little or no effect on this species in any alternative.

## *Wildlife*

### *Shoshone Sculpin (Candidate Endangered)*

#### Shoshone Sculpin (Candidate Endangered)

Populations of Shoshone sculpin were estimated to be 15,000 to 20,000 on public land in Box Canyon, and 20,000 in Blue Heart Springs (*Griffith 1981*) (see Map 7). These are the second and third largest known populations of the species and the largest known populations on public land. Habitat condition is excellent with populations completely filling the available habitat. Sculpin in Box Canyon are threatened by sedimentation from return irrigation flow, by soil disturbance in the canyon, and, most importantly, by potential diversion of water from the spring source on private land.

#### Ring-Necked Pheasant

Roughly 50,000 pheasants are believed to occur in the planning area where public lands and agricultural lands are adjacent. Habitat is good to excellent with public land providing winter and escape cover where sagebrush and pockets of riparian habitat occur. Good cover is especially important on isolated tracts of public land that provide the only cover in a local area dominated by agriculture. The protection of existing stands of sagebrush from wildfire and planned removal is needed to maintain and increase the population. The existing Isolated Tracts Habitat Management Plan (HMP) has the protection and creation of pheasant habitat as one of its main objectives.

#### Gray Partridge (Hungarian Partridge)

About 8,300 partridge are believed to occur in the planning area. Habitat requirements for this game bird are very similar to those for the ring-necked pheasant.

#### Sage Grouse

Sage grouse numbers have fluctuated between an estimated 1,000 to 17,000 birds since 1950. Currently, 350,000 acres of nesting habitat occur within a two-mile radius of known leks in the planning area (see Map 7). Existing breeding habitat is in good to excellent condition from the brush standpoint, but is lacking in forbs. Experimental prescribed burns are being conducted on 13,000 acres in this habitat to increase forb production. Winter habitat (see Map 7) is in excellent condition due to the extensive area of dense sagebrush cover. Much of the historic breeding range between State Highway 75 and the Milner-Gooding Canal has been destroyed by recurring wildfire. This habitat

## Wildlife

### Hybrid Cutthroat/Rainbow Trout

could be restored if the brush would be protected until it again reaches the required height and density for sage grouse. Rapid suppression of wildfire is essential to preserving the remaining sage grouse habitat and to increasing brush cover in recently burned areas.

### Pronghorn

An estimated 615 pronghorn occur widely in the planning area. Much of the current summer and fall habitat is of marginal quality due to a shortage of forbs and lack of water. Much of the winter range (see Map 7) is also marginal due to the loss of brush to recurring wildfires and the historic progressive loss of winter range to agriculture and urban development. Further, the winter range outlined (see map 7) is used mainly in typical or average winters. In severe winters with deeper snow, such as 1981-1982 and 1983-1984, pronghorn are forced farther south into even poorer habitat along the fringes of agricultural land. Water development, forb seedings, and the protection and increase of brush in the winter range is needed to increase populations.

### Mule Deer

About 400 resident mule deer are estimated to occur in the planning area. These animals are widely scattered in low numbers. Year-round habitat for mule deer is generally marginal. This is because of climate and topography; thus, there is little or no potential for increasing numbers of resident deer. An estimated 1,600 mule deer winter in the planning area (see Map 7). Winter habitat is generally good due to the availability of sagebrush, rabbitbrush, and bitterbrush, as well as the cover provided by the topographic relief in the lava flows. The winter range outlined (see Map 7) is used only in typical winters. In more severe winters, such as 1981-1982 and 1983-1984, deer are forced farther south into poorer habitat along the edges of agricultural lands. Conversely, in unusually mild winters, such as 1976-1977, most deer may remain at higher elevations. Protection of brush in winter range from wildfire is needed to maintain this herd.

### Hybrid Cutthroat/Rainbow Trout

Vineyard Creek provides the main known spawning habitat for a unique strain of fall-spawning hybrid rainbow cutthroat trout (see Map 7). Population size is unknown. The habitat is presently threatened by sedimentation from irrigation return flow that crosses public land above the canyon (Thomas 1980).

Wildlife  
Non-Game Species

Non-Game Species

An estimated 99,000 pairs of non-game birds from 73 species nest in the planning area, whereas at least 167 species use the area at some time during the year. Numbers and diversity of breeding birds are greatest in diverse habitats with a mature sagebrush component. Protection of these habitats from wildfire is necessary. Numbers and diversity of non-game birds is taken to be an indication of the status of other non-game groups such as reptiles and small mammals.

Riparian Habitat

Riparian habitat is very scarce in the planning area because of climate, topography, and soils. About nine miles of streambank along the Little Wood River, the only substantial riparian zone, were fenced between 1975 and 1983 to protect existing riparian habitat and allow the recovery of vegetation all along this reach. Nearly all public land along the Little Wood River is now protected.

There are numerous small patches of riparian habitat, many less than one acre, along irrigation canals, the Snake River, natural playas, and reservoirs across the planning area. The most important of these have already been fenced to protect them from grazing. For example, Star Lake, a diverse wetland with surface water, has been fenced and a steady supply of water has been secured. Star Lake has over 60 acres of emergent aquatic vegetation as well as large trees. A 100-acre wetland in the Norland Allotment was fenced in 1983 as part of the wildlife Isolated Tracts program. Two other high-quality wildlife Isolated Tracts, occurring along irrigation canals, have also been fenced to protect over a mile of existing riparian vegetation. Through cooperative agreements with private individuals, riparian habitat by Wilson and Goose lakes has been protected. In all, 545 acres of Isolated Tracts have been fenced specifically to exclude livestock from riparian areas. All Isolated Tracts with significant riparian habitat are to be retained in all alternatives. On those tracts, fencing will proceed as funding allows to further protect riparian zones where needed. Where native vegetation is not adequate, especially woody species, shrubs and trees will be planted to speed habitat succession.

Isolated Tracts

Currently, 87 tracts of land totalling 10,563 acres are being managed under the Shoshone Isolated Tracts Wildlife Habitat Management Plan (HMP) (see Map 8). These tracts are typically the best wildlife habitat in an area that is predominantly agricultural. Objectives of the HMP are to maintain or improve the habitat quality on these tracts, mainly for pheasant winter and nesting



cover, but also for gray partridge, doves, passerine birds, raptors, and other wildlife species. These tracts will be protected from unauthorized use (e.g., dumping, agricultural trespass) and will be open to recreational use, including hunting.

## LIVESTOCK FORAGE

### Grazing Management

The Monument Planning Area includes 910,046 acres of allotted public land (including 677 acres of National Wildlife Refuge) in 89 grazing allotments. In addition, there are 8,166 acres of Reclamation Withdrawal land within existing allotments. Since the Reclamation Withdrawal lands are controlled by another agency, they were not included in earlier adjudications and do not have grazing preference attached to them. The Bureau of Reclamation has assigned BLM the grazing management responsibility on some withdrawn lands. Unallotted tracts total 269,620 acres, consisting primarily of unproductive lava flows and isolated parcels of public land.

Existing grazing allotments include 26,482 acres of private land and 42,060 acres of State land within their boundaries. Some of the land controlled by permittees is offered for exchange-of-use and is managed in conjunction with the public lands; the rest is informally managed as part of the allotments.

The Canyon MFP, completed in 1974, identified 2,535 acres of public land within present allotments for disposal, primarily around the I-84/U.S. 93 interchange. Desert Land Entry and Carey Act applications also encumber 39,026 acres within grazing allotments.

There are presently 186 permittees in the planning area who control 149,135 AUMs of active livestock preference. Of the total active preference, 74,967 AUMs (50.3 percent) are sheep preference, 73,892 AUMs (49.6 percent) are cattle preference, and 109 AUMs (0.1 percent) are horse preference. There are 7 sheep allotments, 62 cattle allotments, 1 horse allotment, 4 cattle and horse allotments, and 11 cattle and sheep allotments in the planning area. In addition, four allotments have no established preference, kind of livestock, season of use, or grazing system. In 23 allotments, several operators run livestock in common, while the other 66 allotments are private allotments for a single operator. See Table D-1 in Appendix D for specific information about preference for each allotment.

Presently 49.8 percent of the allotted public acres and 52.8 percent of the total active preference are under allotment management plans (AMPs) or informal grazing systems. There are fifteen allotments with rest-rotation grazing systems, three allotments with modified rest-rotation grazing systems, and eight allotments with deferred-rotation grazing systems. Generally, rest-rotation grazing systems have been successful, with less consistent success